CLAIMS

What is claimed is:

1. A method for modifying bioavailability of a bioactive substance, the method comprising subjecting said bioactive substance to a laser to modify the structure thereof.

2. The method according to claim 1, wherein said method comprises subjecting said bioactive substance to a laser prior to ingestion.

3. The method according to claim 1, wherein the method comprises subjecting the bioactive substance to the laser while said bioactive substance is in powder form.

4. The method according to claim 1, wherein the method comprises subjecting the bioactive substance to the laser while said bioactive substance is in crystalline form.

5. The method according to claim 1, wherein the method comprises subjecting the bioactive substance to the laser while said bioactive substance is in a solution.

6. The method according to claim 1, wherein said bioactive substance is an amino acid.

7. The method according to claim 1, wherein said method comprises providing a fractional frequency shift to said laser to traverse sparse constructive nodes through said bio-active substance.

8. The method according to claim 1, wherein the method comprises altering said bioactive substance to modify nitric oxide production following ingestion of said modified bioactive substance.

9. The method according to claim 1, wherein said method comprises modifying the structure of said bioactive substance to homogenize and flatten chemical bonds within said bioactive substance.

10. The method according to claim 9, wherein said bioactive substance is betaine hydrochloride.

11. The method according to claim 1, wherein said method comprises modifying said bioactive substance to enhance methylation after ingestion.

12. The method according to claim 11, wherein said bioactive substance is trimethylglycine plus metabolic cofactors.

13. A method for modifying production of nitric oxide within a mammal, said method comprising: selecting an amino acid; modifying said amino acid with a laser; and ingesting said modified amino acid.

14. The method according to claim 13, wherein said amino acid is arginine.

15. The method according to claim 13, wherein said amino acid is modified by exposure to laser radiation with an amplitude modulation at a resonance frequency of or more acoustic vibration frequencies of said amino acid and said laser radiation is structured in polarization and wave patterns.

16. A method for increasing homogeneity and flattening in a bioactive substance, said method comprising: selecting a bioactive substance to modify; and exposing said bioactive substance to laser radiation with an amplitude modulation at a resonance of one or more acoustic vibration frequencies of said bioactive substance and said laser radiation is structured in polarization and wave patterns.

17. A method for reducing blood levels of homocysteine comprising: modifying trimethylglycine and cofactors through exposure to laser radiation; and
ingesting an effective amount of said modified trimethylglycine and cofactors.

18. The method for reducing blood levels of homocysteine according to claim 17, wherein said method comprises consuming at least 2 grams of modified trimethylglycine and cofactors daily.

19. The method for reducing blood levels of homocysteine according to claim 17, wherein said method comprises consuming at least 4 grams of modified trimethylglycine and cofactors daily.

20. The method for reducing blood levels of homocysteine according to claim 17, wherein said method comprises consuming at least 6 grams of modified trimethylglycine and cofactors daily.

21. The method for reducing blood levels of homocysteine according to claim 17, wherein the method comprises forming said modified trimethylglycine and cofactors by exposure to laser radiation with an amplitude modulation at a resonance frequency of one or more acoustic vibration frequencies of said trimethylglycine and cofactors and said laser radiation is structured in polarization and wave patterns.

22. A method for treating anxiety comprising:

preparing modified trimethylglycine and cofactors by subjecting said trimethylglycine and cofactors to laser radiation; and ingesting an effective amount of said modified trimethylglycine and cofactors.

23. The method for treating anxiety according to claim 22, wherein said method comprises consuming at least 2 grams of modified trimethylglycine and cofactors daily.

24. The method for treating anxiety according to claim 22, wherein said method comprises consuming at least 4 grams of modified trimethylglycine and cofactors daily.

25. The method for treating anxiety according to claim 22, wherein said method comprises consuming at least 6 grams of modified trimethylglycine and cofactors daily.

26. The method for treating anxiety according to claim 22, wherein the method comprises forming said modified trimethylglycine and cofactors by exposure to laser radiation with an

amplitude modulation at a resonance frequency of one or more acoustic vibration frequencies of said trimethylglycine and cofactors and said laser radiation is structured in polarization and wave patterns.

27. A method for treating depression comprising:

preparing modified trimethylglycine and cofactors by subjecting said trimethylglycine and cofactors to laser radiation; and

ingesting an effective amount of said modified trimethylglycine and cofactors.

28. The method for treating depression according to claim 27, wherein said method comprises consuming at least 2 grams of modified trimethylglycine and cofactors daily.

29. The method treating depression according to claim 27, wherein said method comprises consuming at least 4 grams of modified trimethylglycine and cofactors daily.

30. The method for treating depression according to claim 27, wherein said method comprises consuming at least 6 grams of modified trimethylglycine and cofactors daily.

31. The method for treating depression according to claim 27, wherein the method comprises forming said modified trimethylglycine and cofactors by exposure to laser radiation with an amplitude modulation at a resonance frequency of one or more acoustic vibration frequencies of said trimethylglycine and cofactors and said laser radiation is structured in polarization and wave patterns.

32. A method for treating obsessive-compulsive symptoms comprising: preparing modified trimethylglycine and cofactors by subjecting said trimethylglycine and cofactors to laser radiation; and

ingesting an effective amount of said modified trimethylglycine and cofactors.

33. The method for treating obsessive-compulsive symptoms according to claim 32, wherein said method comprises consuming at least 2 grams of modified trimethylglycine and cofactors daily.

34. The method for treating obsessive-compulsive symptoms according to claim 32, wherein said method comprises consuming at least 4 grams of modified trimethylglycine and cofactors daily.

35. The method for treating obsessive-compulsive symptoms according to claim 32, wherein said method comprises consuming at least 6 grams of modified trimethylglycine and cofactors daily.

36. The method for treating obsessive-compulsive symptoms according to claim 32, wherein the method comprises forming said modified trimethylglycine and cofactors by exposure to laser radiation with an amplitude modulation at resonance frequency of one or more acoustic vibration frequencies of said trimethylglycine and cofactors and said laser radiation is structured in polarization and wave patterns.

37. A method for treating paranoia comprising:

preparing modified trimethylglycine and cofactors by subjecting said trimethylglycine and cofactors to laser radiation; and ingesting an effective amount of said modified trimethylglycine.

38. The method for treating paranoia according to claim 37, wherein said method comprises consuming at least 2 grams of modified trimethylglycine and cofactors daily.

39. The method for treating paranoia according to claim 37, wherein said method comprises consuming at least 4 grams of modified trimethylglycine and cofactors daily.

40. The method for treating paranoia according to claim 37,

wherein said method comprises consuming at least 6 grams of modified trimethylglycine and cofactors daily.

41. The method for treating paranoia according to claim 37, wherein the method comprises forming said modified trimethylglycine and cofactors by exposure to laser radiation with an amplitude modulation at a resonance frequency of one or more acoustic vibration frequencies of said trimethylglycine and cofactors and said laser radiation is structured in polarization and wave patterns.

42. A method for treating hostility comprising:

preparing modified trimethylglycine and cofactors by subjecting said trimethylglycine and cofactors to laser radiation; and ingesting an effective amount of said modified trimethylglycine and cofactors.

43. The method for treating hostility according to claim 42, wherein said method comprises consuming at least 2 grams of modified trimethylglycine and cofactors daily.

44. The method for treating hostility according to claim 42, wherein said method comprises consuming at least 4 grams of modified trimethylglycine and cofactors daily.

45. The method for treating hostility according to claim 42, wherein said method comprises consuming at least 6 grams of modified trimethylglycine and cofactors daily.

46. The method for treating hostility according to claim 42, wherein the method comprises forming said modified trimethylglycine and cofactors by exposure to laser radiation with an amplitude modulation at a resonance frequency of one or more acoustic vibration frequencies of said trimethylglycine and cofactors and said laser radiation is structured in polarization and wave patterns.

47. A method for treating perceptions of bodily distress, aches, and pains comprising: preparing modified trimethylglycine and cofactors by subjecting said trimethylglycine and cofactors to laser radiation; and ingesting an effective amount of said modified trimethylglycine and cofactors.

48. The method for treating perceptions of bodily distress, aches, and pains according to claim 47, wherein said method comprises consuming at least 2 grams of modified trimethylglycine and cofactors daily.

49. The method for treating perceptions of bodily distress, aches, and pains according to claim 47, wherein said method comprises consuming at least 4 grams of modified trimethylglycine and cofactors daily.

50. The method for treating perceptions of bodily distress, aches, and pains according to claim 47, wherein said method comprises consuming at least 6 grams of modified trimethylglycine and cofactors daily.

51. The method for treating perceptions of bodily distress, aches, and pains according to claim 47, wherein the method comprises forming said modified trimethylglycine and cofactors by exposure to laser radiation with an amplitude modulation at resonance frequency of one or more acoustic vibration frequencies of said trimethylglycine and cofactors and said laser radiation is structured in polarization and wave patterns.

52. A method for increasing systemic DNA methylation and SAMe levels, the method comprising: preparing modified trimethylglycine and cofactors by subjecting said trimethylglycine and cofactors to laser radiation; and ingesting an effective amount of said modified trimethylglycine and cofactors.

53. The method for increasing systemic DNA methylation and SAMe levels according to claim 52, wherein said method comprises consuming at least 2 grams of modified trimethylglycine and cofactors daily.

54. The method for increasing systemic DNA methylation and SAMe levels according to claim 52, wherein said method comprises consuming at least 4 grams of modified trimethylglycine and cofactors daily.

55. The method for increasing systemic DNA methylation and SAMe levels according to claim 52, wherein said method comprises consuming at least 6 grams of modified trimethylglycine and cofactors daily.

56. The method for increasing systemic DNA methylation and SAMe levels according to claim 52, wherein the method comprises forming said modified trimethylglycine and cofactors by exposure to laser radiation with an amplitude modulation at resonance frequency of one or more acoustic vibration frequencies of said trimethylglycine and cofactors and said laser radiation is structured in polarization and wave patterns.

57. A method for treating autoimmune disorders comprising: preparing modified betaine and cofactors by subjecting said betaine and cofactors to laser radiation; and ingesting an effective amount of said modified betaine and cofactors.

58. A method for treating autoimmune disorders according to claim 57, wherein said method comprises consuming at least 6 grams of laser treated betaine plus cofactors daily for an induction period of 2-3 months, followed by a maintenance dose of 1-2 grams of said laser treated betaine plus cofactors daily to be maintained or adjusted based on clinical or biochemical response.

59. The method for treating autoimmune disorders according to claim 57, wherein the method comprises forming said modified betaine plus cofactors by exposure to laser radiation with an amplitude modulation at a resonance frequency of one or more acoustic vibration frequencies of said betaine plus cofactors and said laser radiation is structured in polarization and wave pattern.

60. A method for treating elevated serum total cholesterol levels comprising: preparing modified L-arginine and cofactors by subjecting said L-arginine and cofactors to laser radiation; and ingesting an effective amount of said modified L-arginine and cofactors.

61. The method for treating elevated serum total cholesterol levels according to claim 60, wherein said method comprises consuming at least 3.5 grams of modified L-arginine and cofactors daily.

62. The method for treating elevated serum total cholesterol levels according to claim 60, wherein said method comprises consuming at least 6.5 grams of modified L-arginine and cofactors daily.

63. The method for treating elevated serum total cholesterol levels according to claim 60, wherein said method comprises consuming at least 7.3 grams of modified L-arginine and cofactors daily.

64. The method for treating elevated serum total cholesterol levels according to claim 60, wherein said modified L-arginine and cofactors are formed by exposure to laser radiation with an amplitude modulation at a resonance frequency of one or more acoustic vibration frequencies of said L-arginine and cofactors and said laser radiation is structured in polarization and wave patterns.

65. A method for treating elevated serum LDL cholesterol levels comprising: preparing modified L-arginine and cofactors by subjecting said L-arginine and cofactors to laser radiation; and ingesting an effective amount of said modified L-arginine and cofactors.

66. The method for treating elevated serum LDL cholesterol levels according to claim 65, wherein said method comprises consuming at least 3.5 grams of modified L-arginine and cofactors daily.

67. The method for treating elevated serum LDL cholesterol levels according to claim 65, wherein said method comprises consuming at least 6.5 grams of modified L-arginine and cofactors daily.

68. The method for treating elevated serum LDL cholesterol levels according to claim 65, wherein said method comprises consuming at least 7.3 grams of modified L-arginine and cofactors daily.

69. The method for treating elevated serum LDL cholesterol levels according to claim 65, wherein said modified L-arginine and cofactors are formed by exposure to laser radiation with an amplitude modulation at a resonance frequency of one or more acoustic vibration frequencies of said L-arginine and cofactors and said laser radiation is structured in polarization and wave patterns.

70. A method for treating elevated serum total-to-HDL cholesterol ratios comprising: preparing modified L-arginine and cofactors by subjecting said L-arginine and cofactors to laser radiation; and ingesting an effective amount of said modified L-arginine and cofactors.

71. The method for treating elevated serum total-to-HDL cholesterol ratios according to claim 70, wherein said method comprises consuming at least 3.5 grams of modified L-arginine and cofactors daily.

72. The method for treating elevated serum total-to-HDL cholesterol ratios according to claim 70, wherein said method comprises consuming at least 6.5 grams of modified L-arginine and cofactors daily.

73. The method for treating elevated serum total-to-HDL cholesterol ratios according to claim 70, wherein said method comprises consuming at least 7.3 grams of modified L-arginine and cofactors daily.

74. The method for treating elevated serum total-to-HDL cholesterol ratios according to claim 70, wherein the method comprises forming said modified L-arginine and cofactors by exposure to laser radiation with an amplitude modulation at a resonance frequency of one or more acoustic vibration frequencies of said L-arginine and cofactors and said laser radiation is structured in polarization and wave patterns.

75. A method for treating elevated systolic blood pressure comprising: preparing modified L-arginine and cofactors by subjecting said L-arginine and cofactors to laser radiation; and ingesting an effective amount of said modified L-arginine and cofactors.

76. The method for treating elevated systolic blood pressure according to claim 75, wherein said method comprises consuming at least 3.5 grams of modified L-arginine and cofactors daily.

77. The method for treating elevated systolic blood pressure according to claim 75, wherein said method comprises consuming at least 6.5 grams of modified L-arginine and cofactors daily.

78. The method for treating elevated systolic blood pressure according to claim 75, wherein said method comprises consuming at least 7.3 grams of modified L-arginine and cofactors daily.

79. The method for treating elevated systolic blood pressure according to claim 75, wherein said modified L-arginine and cofactors are formed by exposure to laser radiation with an amplitude modulation at a resonance frequency of one or more acoustic vibration frequencies of said L-arginine and cofactors and said laser radiation is structured in polarization and wave patterns.

80. A method for treating elevated diastolic blood pressure comprising: preparing modified L-arginine and cofactors by subjecting said L-arginine and cofactors to laser radiation; and ingesting an effective amount of said modified L-arginine and cofactors.

81. The method for treating elevated diastolic blood pressure according to claim 80, wherein said method comprises consuming at least 3.5 grams of modified L-arginine and cofactors daily.

82. The method for treating elevated diastolic blood pressure according to claim 80, wherein said method comprises consuming at least 6.5 grams of modified L-arginine and cofactors daily.

83. The method for treating elevated diastolic blood pressure according to claim 80, wherein said method comprises consuming at least 7.3 grams of modified L-arginine and cofactors daily.

84. The method for treating elevated diastolic blood pressure according to claim 80, wherein said modified L-arginine and cofactors are formed by exposure to laser radiation with an amplitude modulation at a resonance of one or more acoustic vibration frequencies of said L-arginine and cofactors and said laser radiation is structured in polarization and wave patterns.

85. A method for treating erectile dysfunction comprising:

preparing modified L-arginine and cofactors by subjecting said L-arginine and cofactors to laser radiation; and

ingesting an effective amount of said modified L-arginine and cofactors.

86. The method for treating erectile dysfunction according to claim 85, wherein said method comprises consuming at least 3.5 grams of modified L-arginine and cofactors daily.

87. The method for treating erectile dysfunction according to claim 85, wherein said method comprises consuming at least 6.5 grams of modified L-arginine and cofactors daily.

88. The method for treating erectile dysfunction according to claim 85, wherein said method comprises consuming at least 7.3 grams of modified L-arginine and cofactors daily.

89. The method for treating erectile dysfunction according to claim 85, wherein said modified L-arginine and cofactors are formed by exposure to laser radiation with an amplitude modulation at a resonance frequency of one or more acoustic vibration frequencies of said L-arginine and cofactors and said laser radiation is structured in polarization and wave patterns.

90. A method for improving immunologic function comprising: preparing modified L-arginine and cofactors by subjecting said L-arginine and cofactors to laser radiation; and

ingesting an effective amount of said modified L-arginine and cofactors.

91. The method for improving immunologic function according to claim 90, wherein said modified L-arginine and cofactors are formed by exposure to laser radiation with an amplitude modulation at a resonance frequency of one or more acoustic vibration frequencies of said L-arginine and cofactors and said laser radiation is structured in polarization and wave patterns.

92. A method for modifying amino acids to reduce the immune reaction to said amino acids, as would be beneficial to provide systemic and tissue amino acids in inflammatory, autoimmune, and allergic conditions, comprising: preparing modified amino acids by subjecting said amino acids to laser radiation; and ingesting an effective amount of said modified amino acids.

93. The method for modifying amino acids to reduce the immune reaction to said amino acids according to claim 92, wherein the method comprises forming said modified amino acids by exposure to laser radiation with an amplified modulation at a resonance frequency of one or more acoustic vibration frequencies of said amino acids and said laser radiation is structured in polarization and wave pattern.

94. A method for modifying amino acids to reduce inflammation, through reducing inflammatory cytokine production in response to said amino acids comprising: preparing modified amino acids by subjecting said amino acids to laser radiation; and ingesting an effective amount of said modified amino acids.

95. The method for modifying amino acids to reduce inflammation, through reducing inflammatory cytokine production, according to claim 94, wherein the method comprises

forming said modified amino acids by exposure to laser radiation with an amplitude modification at a resonance frequency of one or more acoustic vibration frequencies of said amino acids and said laser radiation is structured in polarization and wave pattern.

96. A method for increasing the voltage potential of the brain comprising: preparing modified amino acids by subjecting said amino acids to laser radiation; and ingesting an effective amount of said modified amino acids.

97. The method for increasing the voltage potential of the brain according to claim 96, wherein said method comprises consuming at least 1.5 grams of said modified amino acids.

98. The method for increasing the voltage potential of the brain according to claim 96, wherein said method comprises forming said modified amino acids by exposure to laser radiation with an amplitude modulation at a resonance frequency of one or more acoustic vibration frequencies of said amino acids and said laser radiation is structured in polarization and wave patterns.

99. A method for improving the coherence of brain wave patterns comprising: preparing modified amino acids by subjecting said amino acids to laser radiation; and ingesting an effective amount of said modified amino acids.

100. The method for improving the coherence of brain wave patterns according to claim 99, wherein said method comprises consuming at least 1.5 grams of said modified amino acids.

101. The method for improving the coherence of brain wave patterns according to claim 99, wherein said method comprises forming said modified amino acids by exposure to laser radiation with an amplitude modulation at a resonance frequency of one or more acoustic vibration frequencies of said amino acids, and said laser radiation is structured in polarization and wave patterns.

102. A method for improving the quality of crystal formation through increased homogeneity of unit cell elements or reduced defects in the crystal lattice, or both, comprising: selecting the molecular species to be crystallized; and subjecting said molecular species to laser radiation during the process of crystallization.

103. The method for improving the quality of crystal formation through increased homogeneity of unit cell elements or reduced crystal defects or both according to claim 102, wherein the method comprises subjecting the selected molecular species, during the crystallization process, to laser radiation with an amplitude modulation at a resonance frequency of one or more acoustic vibration frequencies of said molecular species, and said laser radiation is structured in polarization and wave patterns.

104. A method for improving the quality of crystals that have already solidified through homogenizing unit cell elements and/or liberating trapped water in the crystal lattice comprising: selecting the crystal form to be homogenized and/or dried; and subjecting said crystal form to laser radiation.

105. The method for improving the quality of crystals that have already solidified through homogenizing unit cell elements and/or drying according to claim 104, wherein the method comprises subjecting said selected crystal form to laser radiation with an amplitude modulation at a resonance frequency of one or more acoustic vibration frequencies of the molecular species of said selected crystal form, and said laser radiation is structured in polarization and wave patterns.

106. The method for generating highly crystalline and homogeneous simvastatin comprising: dissolving simvastatin in a solvent and subjecting said simvastatin to laser radiation during the crystallization process.

107. The method for generating highly crystalline and homogeneous simvastatin according to claim 106, wherein the method comprises dissolving said simvastatin in a solvent and subjecting said simvastatin to laser radiation with an amplitude modulation at a resonance frequency of one or more acoustic vibration frequencies of said simvastatin, and said laser radiation is structured in polarization and wave patterns.

108. The method for generating amorphous simvastatin comprising: dissolving simvastatin in a solvent and subjecting said simvastatin to laser radiation during the crystallization process.

109. The method for generating amorphous simvastatin according to claim 108, wherein the method comprises dissolving said simvastatin in ethanol or another solvent and subjecting said simvastatin to laser radiation with an amplitude modulation at a resonance frequency of one or

more acoustic vibration frequencies of said simvastatin, and said laser radiation is structured in polarization and wave patterns.

110. The method for generating amorphous crystals comprising: dissolving the subject compound in a solvent and subjecting said compound to laser radiation during the crystallization process.

111. The method for generating amorphous crystals according to claim 110, wherein the method comprises dissolving the subject compound in a solvent and subjecting said compound to laser radiation with an amplitude modulation at a resonance frequency of one or more acoustic vibration frequencies of said compound, and said laser radiation is structured in polarization and wave patterns.

112. A method for generating novel or desired crystal structures comprising: selecting the molecular species to be crystallized; and subjecting said molecular species to be crystallized to laser radiation during the crystallization process.

113. The method for generating novel or desired crystal structures according to claim 112, wherein the method comprises subjecting said molecular species during crystallization to laser radiation with an amplitude modulation at a resonance frequency of one or more acoustic vibration frequencies of said molecular species, most ideally a higher acoustic vibration frequency than that of the backbone of said molecular species, and said laser radiation is structured in polarization and wave patterns.

113. A method for modifying hydrogen bonding in a crystal comprising: selecting a crystal in which hydrogen bonding is to be modified; and subjecting said crystal to laser radiation.

114. The method for modifying hydrogen bonding in a crystal according to claim 113, wherein the method comprises subjecting said crystal to laser radiation with an amplitude modulation at a resonance frequency of one or more acoustic vibration frequencies of said crystal, and said laser radiation is structured in polarization and wave patterns.

115. A method for modifying the activity or function of two or more molecules at the same time comprising: selecting two or more molecules to modify; and subjecting said molecules to laser irradiation.

116. The method of modifying 2 or more molecules at the same time according to claim 115, wherein the method comprises selecting 2 or more molecules to modify; and subjecting each selected molecule to laser radiation with an amplitude modulation at a resonant frequency of one or more acoustic vibration frequencies of each selected molecule, and said laser radiation is structured in polarization and wave patterns.

117. The method of modifying 2 or more molecules at the same time or 2 or more regions of the same molecule according to claim 116, wherein the method comprises applying laser radiation with 2 or more lasers of the same or different primary wavelengths; and each laser may have one or more modulation frequencies; and each laser may be individually tuned with respect to power

level and characteristics of the optical elements used; and the lasers may be focused as a matrix of rows and columns, or may be focused along a row or column, or may be parabolically arranged to focus on a single point.

118. A method for modifying the activity of an enzyme, substrate, or ligand, the method comprising: selecting an enzyme, substrate, or ligand to be modified; and subjecting said enzyme, substrate, or ligand to laser irradiation to modify the structure thereof.

119. The method for modifying the activity of an enzyme, substrate, or ligand according to claim 118, wherein the method comprises selecting an enzyme, substrate, or ligand to be modified; and subjecting said enzyme, substrate or ligand to laser radiation with an amplitude modulation at a resonance frequency of one or more acoustic vibration frequencies of said enzyme, substrate or ligand to modify the structure thereof, and said laser radiation is structured in polarization and wave patterns.

120. A method of increasing the depth of penetration of laser electromagnetic signals and energy through tissue to enhance the depth and range of therapeutic efficiency of photodynamic therapy, this method comprising: identifying a condition in tissue that may be responsive to photodynamic therapy; and determining a suitable photodynamic compound, photoactivating laser wavelength, and laser radiation dose to use for treatment of said condition; and administering said photodynamic compound and allowing sufficient time for accumulation of said compound in said tissue to be treated; and applying a sufficient dose of sparse constructive nodes of laser radiation to the tissue to be treated via external beam, endoscopically, endarterially or other route as appropriate, with said laser radiation having an amplitude modulation at a

resonant frequency of one or more acoustic vibration frequencies of said photodynamic compound, and said laser radiation is structured in polarization and wave pattern.

121. A method of homogenizing, flattening, and reducing the distortion of backbone twist of aromatic amino acids and L-dopa, and any other dopaminergic, catecholaminergic, or serotonergic precursor, compound, or pharmaceutical agent to enhance the bioavailability of the modified molecular structure, the method comprising: selecting the dopaminergic, catecholaminergic, or serotonergic precursor, compound, or pharmaceutical agent to be modified; and treating said dopaminergic, catecholaminergic, or serotonergic precursor, compound, or pharmaceutical agent with laser radiation.

122. The method of homogenizing, flattening, and reducing the distortion of backbone twist distortion of aromatic amino acids and any other dopaminergic, catecholaminergic, or serotonergic precursor, compound, or pharmaceutical agent to enhance the bioavailability of the modified molecular structure according to claim 121, wherein said method comprises selecting a dopaminergic, catecholaminergic, or serotonergic precursor, compound or pharmaceutical agent to be modified; and treating said dopaminergic, catecholaminergic, or serotonergic precursor, compound or pharmaceutical agent with laser radiation, with an amplitude modulation at a resonance frequency of one or more acoustic vibration frequencies of said precursor, compound or pharmaceutical agent, and said laser radiation is structured in polarization and wave pattern.

123. A method of homogenizing, flattening, and reducing the distortion of backbone twist of a nutrient, pharmaceutical agent, or other bioactive substance to enhance the bioavailability of the modified substance, the method comprising: selecting a nutrient, pharmaceutical agent, or other

bioactive substance to modify; and treating said nutrient, pharmaceutical agent, or other bioactive substance with laser radiation.

124. The method of homogenizing, flattening, and reducing the distortion of backbone twist of a nutrient, pharmaceutical agent, or other bioactive substance to enhance the bioavailability of the modified substance according to claim 123, wherein said method comprises selecting a nutrient, pharmaceutical agent, or other bioactive substance to modify; and treating said nutrient, pharmaceutical agent, or other bioactive substance with laser radiation with an amplitude modulation at a resonant frequency at one or more acoustic vibration frequencies of said nutrient, pharmaceutical agent, or other bioactive substance, and said laser radiation is structured in polarization and wave patterns.

125. A method for increasing the bioavailability of nucleic acid bases, nucleosides or deoxynucleosides, or nucleotide or deoxynucleotide monophosphates, diphosphates, or triphosphates, the method comprising: selecting a nucleic acid base, nucleoside or deoxynucleoside, or nucleotide or deoxynucleotide monophosphate, diphosphate, or triphosphate; and subjecting said selected substance to laser radiation to modify the structure thereof.

126. A method for increasing the bioavailability of nucleic acid bases, nucleosides or deoxynucleosides, or nucleotide or deoxynucleotide monophosphates, diphosphates, or triphosphates according to claim 125, wherein the method comprises selecting a nucleic acid base, nucleoside or deoxynucleoside, or nucleotide or deoxynucleotide monophosphate, diphosphate, or triphosphate to modify; and subjecting said nucleic acid base, nucleoside or

deoxynucleoside, or nucleotide or deoxynucleotide monophosphate, diphosphate, or triphosphate to laser radiation with an amplitude modulation at a resonance frequency of one or more acoustic vibration frequencies of said nucleic acid base, nucleoside or deoxynucleoside, or nucleotide or deoxynucleotide monophosphate, diphosphate, or triphosphate , and said laser radiation is structured in polarization and wave patterns.

127. A method of increasing the bioactivity of high energy phosphates of nucleotides or deoxynucleotides, the method comprising: selecting a nucleotide or deoxynucleotide to modify; and subjecting said nucleotide or deoxynucleotide to laser radiation.

128. The method of increasing the bioactivity of high energy phosphates of nucleotides or deoxynucleotides according to claim 127, wherein the method comprises selecting a nucleotide or deoxynucleotide to modify; and subjecting said nucleotide or deoxynucleotide to laser radiation with an amplitude modulation at a resonance frequency of one or more acoustic vibration frequencies of high energy phosphates of said nucleotide or deoxynucleotide, and said laser radiation is structured in polarization and wave pattern.

129. A method of increasing the bioavailability of a nucleic acid base, nucleoside or deoxynucleoside, or nucleotide or deoxynucleotide monophosphate, diphosphate, or triphosphate whether or not it has been modified with laser treatment according to claim 128, the method comprising: making a solution of said nucleic acid base, nucleoside, or nucleotide monophosphate, diphosphate, or triphosphate with a concentration at least 10 times that of blood plasma; and applying said solution for at least 30 seconds to oral or other nonintestinal mucosa

for direct transmucosal absorption to overcome the extensive degradation of nucleic acid elements as occurs in intestinal mucosa.

130. A method for amplifying or modifying the production or purification of a selected stereoisomer or epimer of a bioactive substance, the method comprising: selecting the stereoisomer to amplify or modify; and subjecting said stereoisomer or epimer to rotationally polarized laser light, with an amplitude modulation at a resonance frequency at one or more acoustic vibration frequencies of said stereoisomer or epimer, and said laser radiation is structured in polarization and wave pattern.

131. A method of reshaping prions or other pathogenic proteins to reduce their pathogenicity, said method comprising: selecting a prion or other pathogenic protein to reshape; and subjecting said prion or other pathogenic protein to laser radiation.

132. The method of reshaping prions or other pathogenic proteins to reduce their pathogenicity according to claim 131, wherein said method comprises selecting a prion or other pathogenic protein to reshape; and subjecting said prion or other pathogenic protein to laser radiation with an amplitude modulation at a resonance frequency of one or more acoustic vibration frequencies of said prion or other pathogenic protein, and said laser radiation is structured in polarization and wave pattern.

133. The method of reshaping prions or other pathogenic proteins to reduce their pathogenicity according to claim 132, wherein said method comprises selecting a prion or other pathogenic

protein to reshape; and determining the peak absorption frequencies of said prions or other pathogenic proteins and their nonpathogenic counterparts using sonoluminescence with CO2 nucleation absorption spectrum analysis or other spectroscopic method or mathematical modeling; and subjecting said prions or other pathogenic proteins to laser radiation with an amplitude modulation of one or more peak absorption frequencies of normal protein, the pathogenic protein, or the differential absorption pattern between the normal and pathogenic counterpart protein to reshape said prions or other pathogenic proteins to reduce their pathogenicity, and said laser radiation is structured in polarization and wave patterns.

134. A method of reshaping pathogenic substances or components of infectious pathogens to reduce their pathogenicity, said method comprising: selecting a pathogenic substance or one or more components of an infectious pathogen to reshape; and subjecting said pathogenic substance or one or more components of said infectious pathogen to laser radiation.

135. The method of reshaping pathogenic substances or components of infectious pathogens to reduce their pathogenicity according to claim 134, wherein said method comprises selecting a pathogenic substance or one or more components of an infectious pathogen to reshape; and subjecting said pathogenic substance or one or more components of said infectious pathogen to laser radiation, with an amplitude modulation at a resonance frequency of one or more acoustic vibration frequencies of said pathogenic substance or of one or more components of said infectious pathogen, and said laser radiation is structured in polarization and wave pattern.

136. The method of reshaping pathogenic substances or components of infectious pathogens to reduce their pathogenicity according to claim 135, wherein said method comprises selecting a

pathogenic substance or one or more components of an infectious pathogen to reshape; and determining the peak absorption frequencies of said pathogenic substance or one or more components of said infectious pathogen using sonoluminescence with CO2 nucleation absorption spectrum analysis or other spectroscopic method or mathematical modeling; and subjecting said pathogenic substance or one or more components of said infectious pathogen to laser radiation, with an amplitude modulation of one or more peak absorption frequencies of said pathogenic substance or of one or more components of said infectious pathogen, and said laser radiation is structured in polarization and wave pattern.

137. A method of selectively activating specific regions of selected molecules to increase the production of desired products in a chemical reaction, to generate novel reaction sequences for products, or to generate the production of novel products with specific molecular shapes, properties, and activities, said method comprising: selecting one or more molecular species to modify; and subjecting said molecular species to laser radiation.

138. The method of selectively activating specific regions of selected molecules to increase the production of desired products in a chemical reaction, to generate novel reaction sequences for products, or to generate the production of novel products with specific molecular shapes, properties, and activities according to claim 137, wherein said method comprises selecting one or more molecular species to modify; and subjecting said molecular species to laser radiation with an amplitude modulation at a resonance frequency of one or more acoustic vibration frequencies of said molecular species, and said laser radiation is structured in polarization and wave pattern.

139. The method of selectively activating specific regions of selected molecules to increase the production of desired products in a chemical reaction, to generate novel reaction sequences for products, or to generate the production of novel products with specific molecular shapes, properties, and activities according to claim 136, wherein said method comprises selecting one or more molecular species to modify; and determining the peak absorption frequencies of said specific regions of selected molecular species to be modified using sonoluminescence with CO2 nucleation absorption spectrum analysis, other spectrographic method, or through mathematical molecular modeling; and subjecting said molecular species to laser radiation with an amplitude modulation of one or more peak absorption frequencies of said molecular species, and said laser radiation is structured on polarization and wave pattern.

140. The method of selectively activating molecular species or specific regions of molecular species to generate a signal for qualitative or quantitative detection or analysis, said method comprising: selecting a specific molecular species or region of a molecular species to activate through resonance; and subjecting said molecular species to laser radiation with an amplitude modulation at a resonance frequency of one or more acoustic vibration frequencies of said molecular species, and said laser radiation is structured in polarization and wave pattern.

141. The method of selectively activating molecular species or specific regions of molecular species to generate a signal for qualitative or quantitative detection or analysis according to claim 140, wherein said method comprises selecting a specific molecular species or region of a molecular species to activate through resonance; and determining the peak absorption frequencies of said specific molecular species or region of a molecular species using sonoluminescence with CO2 nucleation absorption spectrum analysis, other spectrographic

method, or through mathematical molecular modeling; and subjecting said molecular species to laser radiation with an amplitude modulation of one or more peak absorption frequencies of said molecular species, and said laser radiation is structured in polarization and wave pattern.

142. A method for creating sub-picosecond laser pulses comprising: passing a laser beam through a first diffractive grating, a refractive element, and a second diffractive grating.

143. A method for creating a tightly coherent string of sub-picosecond duration laser pulses comprising: passing a laser beam through a first diffractive grating, a refractive element, and a second diffractive grating.

144. A method for creating a structured electro magnetic field comprising: passing a laser beam through a first diffractive grating, a refractive element, and a second diffractive grating.